



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/638,422	08/12/2003	Ching-Jung Chu	CHUC3005/JJC/JS	5196

23364 7590 11/28/2007
BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER

SUTHERS, DOUGLAS JOHN

ART UNIT	PAPER NUMBER
----------	--------------

2615

MAIL DATE	DELIVERY MODE
-----------	---------------

11/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/638,422

Applicant(s)

CHU ET AL.

Examiner

Douglas Suthers

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Art Unit: 2615

DETAILED ACTION

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US 6885900 B1).

Regarding claim 1, Rybicki discloses a apparatus for converting to multi-channel output from two-channel and using a MIC_IN connector, a LINE_IN connector, and a LINE_OUT connector for outputting multi-channel sound effect, comprising:

a coder/decoder (CODEC) (figure 2, items 22, 24, 26) with control functions, for coding or decoding sound signals so as to output surround left signal, surround right signal, left channel signal, and right channel signal (column 2 lines 35-45), input

Art Unit: 2615

microphone signal, LINE_IN_L and LINE_IN_R signals (column 2 lines 46-57), and generate control signal (figures 1 and 2, item 38);

a MIC_IN connector switch (figure 2, drivers 30 and 32) for switching the MIC_IN connector as an input means or an output means based on the control signal;

a first filter (capacitors as shown) for coupling surround signals to the MIC_IN connector; and

a second filter (capacitors as shown) for coupling the microphone signal inputted by the MIC_IN connector to the CODEC;

The embodiment of figure 2 does not disclose a third filter or resistor circuit as claimed.

In an alternate embodiment (figure 1) Rybicki discloses:

a filter (capacitors as shown) for sending LINE_IN_L and LINE_IN_R signals inputted by the LINE_IN connector to the CODEC; and

a resistor circuit (figure 3) for coupling the surround left signal and the surround right signal to the LINE_IN connector for output via a filter.

Although Rybicki does not disclose the exact filters as claimed, it would have been obvious to one skilled in the art use simple RLC filters for coupling and protection reasons. The use of the claimed filters does not effect overall operation of the system other than providing simple impedance matching and/or circuit isolation and removal of dangerous or unwanted signals.

Although Rybicki does not expressly disclose use of multi-channel signals in excess of four, the examiner takes official notice that multi-channel signals with 6 or

Art Unit: 2615

more channels were well known in the art. Namely standard such as 5.1 that included a central channel signal, and a low-frequency-effect signal were notoriously well known. It was also well known that using standards with more channels produced a more realistic and more enjoyable sound.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to combine the two embodiments of Rybicki in order to output 6 channels. The motivation for doing so would have been to be able to output a higher number of channels, such as that as required by the 5.1 standard, in order to make more realistic and enjoyable sounds. Therefore, it would have been obvious to combine the embodiment of figure 2 with the embodiment of figure 1 to obtain the invention as specified in claim 1.

Regarding claims 6-8, Rybicki discloses input (28, 32) and output drivers (30, 34), as well as enabling these drivers when in use and disabling the drivers when not in use (column 2 line 58 to column 3 line 30).

Although Rybicki does not expressly disclose a plurality of DACs or ADCs, the examiner takes official notice that converters to and from analog audio signals to digital signals useable by computing systems were notoriously well known in the art. The motivation to provide such would have been to allow for analog signals readily usable by transducers, and digital signals readily usable by digital processors. Using such converters in input and output driver systems were also well known in the art. The motivation to do so would have been to do the least processing in the analog domain,

minimizing error. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to obtain the inventions of claims 6-8.

Claims 2-5, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US 6885900 B1) in view of Papadopoulos et al. (US 6266424 B1).

Regarding claim 2, Rybicki discloses does not disclose a bias circuit.

Papadopoulos discloses comprising a microphone bias circuit for biasing the microphone signal inputted by a MIC_IN connector with a microphone bias signal (figure 2).

Although Rybicki does not disclose the exact filters as claimed, it would have been obvious to one skilled in the art use simple RLC filters for coupling and protection reasons. The use of the claimed filters does not effect overall operation of the system other than providing simple impedance matching and/or circuit isolation and removal of dangerous or unwanted signals.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the bias circuit of Papadopoulos in the apparatus of Rybicki. The motivation for doing so would have been to obtain a microphone signal less prone to error. Therefore, it would have been obvious to combine Papadopoulos with Rybicki to obtain the invention as specified in claim 2.

Regarding claim 3, Rybicki discloses enabling drivers when in use and disabling the drivers when not in use (column 2 line 58 to column 3 line 30).

Regarding claims 4-5, Rybicki discloses control signals. Although Rybicki does not expressly disclose the use of NMOS transistors switching the control signals on and off, the examiner takes official notice that using NMOS transistors for switching functions was well known in the art. The motivation to do so would have been to use well known, standard, reliable components for switching controls. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to obtain the inventions of claims 4 and 5.

Regarding claims 9-10, Rybicki discloses input (28, 32) and output drivers (30, 34), as well as enabling these drivers when in use and disabling the drivers when not in use (column 2 line 58 to column 3 line 30).

Although Rybicki does not expressly disclose a plurality of DACs or ADCs, the examiner takes official notice that converters to and from analog audio signals to digital signals useable by computing systems were notoriously well known in the art. The motivation to provide such would have been to allow for analog signals readily usable by transducers, and digital signals readily usable by digital processors. Using such converters in input and output driver systems were also was well known in the art. The motivation to do so would have been to do the least processing in the analog domain,

minimizing error. Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to obtain the inventions of claims 9-10.

Response to Arguments

Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Loeb et al. (US 2003/0009249 A1) discloses filters similar to the claimed coupling filters.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

Art Unit: 2615

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas Suthers whose telephone number is (571)272-0563. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571)272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

djs




XU MEI
PRIMARY EXAMINER